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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WANG, QUAN ZHEN	

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/005,177	LINDBLAD, TOMMY	
	Examiner	Art Unit	
	Quan-Zhen Wang	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/07/01*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/17/02, 7/2/2/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because description labels and are needed for the blocks and circles in figures. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-4, 6-12, 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asahi (U.S. Patent US 6,222,653 B1).

Regarding claim 1, Asahi discloses an interface device for a fiber optic communication network, the interface device (fig. 16) comprising: an electric circuit arrangement (fig. 16, 967-1); a first receiving section (fig. 16, the area on left hand side of 967-1) for receiving a first transceiver module (fig. 16, 971 and 978) including a first receiver unit (fig. 16, 971) for receiving optical signals from an optical conduction path (fig. 16, the line on left hand side of 971), the first receiver unit comprising a first opto-electrical converter (fig. 16, 971) for converting the received optical signals to electrical signals, which are adapted to be conducted to the electric circuit arrangement (fig. 16, 979), and a first transmitter unit (fig. 16, 978) for transmitting optical signals to an optical conduction path (fig. 16, the line on left hand side of 978), the first transmitter unit comprising a first electro-optical converter (fig. 16, 978) for converting electrical signals, received from the electric circuit arrangement (fig. 16, 979), to optical signals before they are transmitted from the transmitter unit, a second receiving section (fig. 16, the area on right hand side of 967-1) for receiving a second transceiver module (fig. 16, 975 and 974), including a second receiver unit (fig. 16, 974) for receiving optical signals from an optical conduction path, the second receiver unit (fig. 16, 974) comprising a second opto-electrical converter (fig. 16, 974) for converting the received optical signals to electrical signals, which are adapted to be conducted to the electric circuit arrangement,

and a second transmitter unit (fig. 16, 975) for transmitting optical signals to an optical conduction path (fig. 16, the line on right hand side of 975), the second transmitter unit comprising a second electro-optical converter (fig. 16, 975) for converting electrical signals received from the electric circuit arrangement (fig. 16, 979), to optical signals before they are transmitted from the transmitter unit; a switching unit (fig. 16, 979) for switching the electric circuit arrangement between at least a first and a second state (fig. 16, 979), wherein, in the first state (fig. 16, 979 arrow from 971 to 978) the electrical signals from the first receiver unit (fig. 16, 971) are conducted to the first transmitter unit (fig. 16, 978) and in the second state (fig. 16, 979 arrow from 974 to 978) the electrical signals from the second receiver unit (fig. 16, 974) are conducted to the first transmitter unit (fig. 16, 978). Asahi differs from the claimed invention in that Asahi does not specifically teach a controller arranged to automatically control the switching unit in response to at least one control signal such that the first state is selected when the control signal indicates either that no transceiver module is attached to the second receiving section of that no optical signal above a certain level is received by a transceiver module attached to the second receiving section. However, Asahi further teaches that the switching unit changes its state in response to a fiber cut (column 2, lines 55-65), which anticipates the control signal indicating no optical signal above a certain signal level is received by a transceiver module attached to the second receiving section. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to use the signal in response to a fiber cut to control the switch unit to switch to first state. One of ordinary skill in the art would have been

motivated to do this in order to avoid interrupting the communications between various system devices in the network when the optical fiber line of segment is severed or damaged.

Regarding claim 3, Asahi further teaches that the switching unit changes its state in response to a fiber cut (column 2, lines 55-65), which reads the control signal indicating no optical signal above a certain signal level is received by a transceiver module attached to the second receiving section.

Regarding claim 4, Asahi further teaches that the controller (fig. 16, 979) of an interface unit (fig. 16, 967-1) is arranged to receive a second control signal from a network management system (fig. 16, the arrow under 980).

Regarding claim 6, the interface device (fig. 16, 967-1) inherently comprising a circuit board carrying the electric circuit arrangement, the first receiving section, second receiving section, the switching unit and controller.

Regarding claim 7, Asahi further teaches a method using the interface device (fig. 16, 967-1) in an optical fiber communication network (fig. 17c) including at least a first network unit (fig. 17, NODE 1) arranged for bi-directional optical communication (fig. 17c, two parallel dark lines connecting nodes) and a second network unit (fig. 17c, NODE 6) arranged for bi-directional optical communication, according to the method: the first transceiver module is attached to the first receiving section (not shown in fig. 17c, but it is inherent the transceiver module is attached to the receiving section) and the first receiver unit and the first transmitter unit are connected via a bi-directional optical communication path to the first network unit, the second transceiver module is

attached to said second receiving section (not shown in fig. 17c, but it is inherent the transceiver module is attached to the receiving section) and the second receiver unit and the second transmitter unit are connected via a bi-directional optical communication path to the second network unit, and the switching unit is set in the second state (fig. 17c, communication passes through NODE1 and NODE6).

Regarding claims 8-9, Asahi further teaches the network unit comprises a multiplexer/demultiplexer (fig. 16, 952, 953), and is connected to a large fiberoptic network (fig. 16) with which the second network unit (fig. 16, 901-m) may communicate via the multiplexer/demultiplexer.

Regarding claim 10, Asahi further teaches the second network unit (fig. 17c, NODE 6) is subscriber unit (column 1, lines 51-63) wherein the interface device together with the attached first and second transceiver modules adapt the optical signals from the second network unit before transmitting the signals to the multiplexer/d/multiplexer (fig. 17c, NODE 1), and also adapt signals from said multiplexer/demultiplexer (fig. 17c, NODE1) before they are transmitted to the second network unit.

Regarding claim 11, Asahi further teaches that the interface device together with the attached first and second transceiver modules perform the function of a repeater mode (fig. 17c, NODE 6).

Regarding claim 12, Asahi further teaches a method using the interface device (fig. 16, 967-1) in an optical fiber communication network (fig. 17c) including at least a first network unit (fig. 17, NODE 3) arranged for bi-directional optical communication (fig. 17c, two parallel dark lines connecting nodes, signals propagate both clockwise

and counter clockwise) and a second network unit (fig. 17c, NODE 4) arranged for bi-directional optical communication, according to the method: the first transceiver module is attached to the first receiving section (not shown in fig. 17c, but it is inherent the transceiver module is attached to the receiving section) and the first transmitter unit is connected to transmit optical signals to the first network unit (fig. 17c, NODE 3) while the first receiver unit is connected to receive optical signals from the second network unit (fig. 17c, NODE 4), the first network unit (fig. 17c, NODE 3) is connected to the second network unit (fig. 17c, NODE 4) such that signals from the first network unit are transmitted to the second network unit without passing through the interface device (fig. 17c, NODE 3) and the switching unit is set in the first state (as indicated in fig. 16, 979 arrow from 971 to 978).

Regarding claim 13, Asahi differs from the claimed invention in that Asahi does not specifically teach that no second transceiver module is attached to the second receiving section. However, Asahi further teaches the network unit only uses the first receiving section (fig. 17c, NODE 3). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to operate the system without the second transceiver module is attached to the second receiving section whenever the second transceiver module is not necessary in order to save spare parts for the system.

Regarding claims 14-15, Asahi further teaches the network unit comprises a multiplexer/demultiplexer (fig. 16, 952, 953), and is connected to a large fiber optic

network (fig. 16) with which the second network unit (fig. 16, 901-m) may communicate via the multiplexer/demultiplexer.

Regarding claim 16, Asahi further teaches the second network unit (fig. 17c, NODE 6) is subscriber unit (column 1, lines 51-63) wherein the interface device together with the attached first and second transceiver modules adapt the optical signals from the second network unit before transmitting the signals to the multiplexer/d/multiplexer (fig. 17c, NODE 1), and also adapt signals from said multiplexer/demultiplexer (fig. 17c, NODE1) before they are transmitted to the second network unit.

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asahi (U.S. Patent US 6,222,653 B1) in view of Kamiguchi et al. (U.S. Patent US 4,842,801).

Regarding claim 2, Asahi differs from the claimed invention in that Asahi does not specifically teach that at least one control signal is derived by either sensing a logical voltage over a sense-resistor, which voltage indicates whether a transceiver module is attached to said second receiving section, or by sensing whether a driving current is consumed by a transceiver module attached to said second receiving section. However, Kamiguchi teaches a circuitry device to detect driving current (column 3, lines 58-62). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to apply the current detecting circuitry device as it is taught by Kamiguchi in the system taught by Asahi to detect if driving current is consumed by a transceiver module attached to said second receiving section in order to detect if the module is accidentally removed from a system.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asahi (U.S. Patent US 6,222,653 B1) in view of Gehrke et al. (U.S. Patent US 6,310,992 B1).

Regarding claim 5, Asahi differs from the claimed invention in that Asahi does not specifically teach that the first and second receiving sections are designed such that the first and second transceiver modules may be plugged into the receiving sections and unplugged therefrom in a quick-connect manner. However, Gehrke teaches an apparatus for interconnecting multiple modular devices in communication system wherein the optical receiver and transmitter (fig. 2, 102) are plugged into a slot in a base station (column 4, lines 10-18). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to apply the technique taught by Gehrke in the system taught by Asahi to construct an optical interface device wherein the transceiver modules are plugged into a base station in order to build an interface device with hot swap capability.

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fassih-Nia et al. (U.S. Patent US 6,307,652 B1) teaches a fault tolerance optical communication apparatus using electrical switch interconnection (figs. 3 and 4). DeCusatis et al. (U.S. Patent US 6,359,713 B1) a system for optical open fiber control propagation. Alagar et al. (U.S. Patent Application Publication US

2003/0169470 A1) disclose an optical network systems utilizing an interface device (fig. 8) with electrical switch interconnection.

2.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (571) 272-3114. The examiner can normally be reached on 8:30 AM - 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

qzw

Hanh Phan
Primary Examiner
11/24/04